

# Valery Gusynin

## List of Publications by Year in descending order

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142  
papers

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144  
docs citations

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times ranked

4259  
citing authors

#	ARTICLE	IF	CITATIONS
1	Gap generation and flat band catalysis in dice model with local interaction. Physical Review B, 2021, 103, .	1.1	20
2	Orbital susceptibility of T-graphene: Interplay of high-order van Hove singularities and Dirac cones. Physical Review B, 2021, 103, .	1.1	12
3	Genesis and fading away of persistent currents in a Corbino disk geometry. Physical Review B, 2021, 104, .	1.1	5
4	Landau-Khalatnikov-Fradkin transformation in three-dimensional quenched QED. Physical Review D, 2020, 102, .	1.6	11
5	Four-loop singularities of the massless fermion propagator in quenched three-dimensional QED. Physical Review D, 2020, 102, .	1.6	5
6	Work function, deformation potential, and collapse of Landau levels in strained graphene and silicene. Physical Review B, 2020, 101, .	1.1	8
7	RKKY interaction in a doped pseudospin-1 fermion system at finite temperature. Physical Review B, 2020, 101, .	1.1	16
8	Graphene nanostructures. Low Temperature Physics, 2020, 46, 209-210.	0.2	0
9	Differential entropy per particle in Dirac semimetals in external magnetic field. Low Temperature Physics, 2020, 46, 264-268.	0.2	3
10	Academician of the NAS of Ukraine Vadym Mykhailovych Loktev (to the 75th anniversary of his Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 38	0.1	0
11	Electron states for gapped pseudospin-1 fermions in the field of a charged impurity. Physical Review B, 2019, 99, .	1.1	54
12	Entropy Signatures of Topological Phase Transitions. Journal of Experimental and Theoretical Physics, 2018, 127, 958-983.	0.2	9
13	Electronic states of pseudospin-1 fermions in dice lattice ribbon. Low Temperature Physics, 2018, 44, 1313-1324.	0.2	24
14	Electron states in the field of charged impurities in two-dimensional Dirac systems (Review Article). Low Temperature Physics, 2018, 44, 371-400.	0.2	15
15	Detection of topological phase transitions through entropy measurements: The case of germanene. Physical Review B, 2018, 97, .	1.1	17
16	Entropy per particle spikes in the transition metal dichalcogenides. Low Temperature Physics, 2018, 44, 561-566.	0.2	8
17	Broken symmetry states in bilayer graphene in electric and in-plane magnetic fields. Physical Review B, 2017, 95, .	1.1	3
18	Coulomb center instability in bilayer graphene. Physical Review B, 2017, 96, .	1.1	5

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19	Entropy spikes as a signature of Lifshitz transitions in the Dirac materials. Scientific Reports, 2017, 7, 10271.	1.6	17
20	Critical number of fermions in three-dimensional QED. Physical Review D, 2016, 94, .	1.6	39
21	Screening of a charged impurity in graphene in a magnetic field. Physical Review B, 2016, 94, .	1.1	19
22	Supercriticality of novel type induced by electric dipole in gapped graphene. Physical Review B, 2015, 92, .	1.1	11
23	Transport properties of AB stacked (Bernal) bilayer graphene on and without substrate within 2- and 4-band approximations. AIP Conference Proceedings, 2015, , .	0.3	1
24	Gap generation and phase diagram in strained graphene in a magnetic field. Physical Review B, 2015, 91, .	1.1	6
25	Spin Nernst effect and intrinsic magnetization in two-dimensional Dirac materials. Low Temperature Physics, 2015, 41, 342-352.	0.2	7
26	Supercritical electric dipole and migration of electron wave function in gapped graphene. Europhysics Letters, 2015, 111, 37003.	0.7	13
27	Dynamical polarization in ABC-stacked multilayer graphene in a magnetic field. Physical Review B, 2014, 90, .	1.1	1
28	Quantum oscillations as the tool for study of new functional materials (Review Article). Low Temperature Physics, 2014, 40, 270-279.	0.2	12
29	Anomalous thermospin effect in the low-buckled Dirac materials. Physical Review B, 2014, 90, .	1.1	28
30	Supercritical instability in graphene with two charged impurities. Physical Review B, 2013, 88, .	1.1	18
31	Gap generation in ABC-stacked multilayer graphene: Screening versus band flattening. Physical Review B, 2013, 88, .	1.1	12
32	Phase Diagram of the Lowest Landau Level in Bilayer Graphene. Progress of Theoretical Physics Supplement, 2012, 197, 107-127.	0.2	0
33	Magnetic field driven instability in the planar NJL model in the real-time formalism. Physical Review D, 2012, 86, .	1.6	5
34	Broken symmetry $\langle \mathbf{m} \rangle \propto \langle \mathbf{m} \rangle \cdot \langle \mathbf{m} \rangle$ Hall states in bilayer graphene: Landau level mixing and dynamical screening. Physical Review B, 2012, 85, .	1.1	37
35	Coulomb interaction and magnetic catalysis in the quantum Hall effect in graphene. Physica Scripta, 2012, T146, 014018.	1.2	20
36	Magneto-optical and optical probes of gapped ground states of bilayer graphene. Physical Review B, 2012, 86, .	1.1	24

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37	Coexistence and competition of nematic and gapped states in bilayer graphene. Physical Review B, 2012, 86, .	1.1	18
38	Dynamical polarization of graphene in a magnetic field. Physical Review B, 2011, 83, .	1.1	53
39	Magnetic field driven instability of a charged center in graphene. Physical Review B, 2011, 83, .	1.1	34
40	Broken-symmetry states and phase diagram of the lowest Landau level in bilayer graphene. Physical Review B, 2011, 84, .	1.1	30
41	Energy gaps at neutrality point in bilayer graphene in a magnetic field. JETP Letters, 2010, 91, 314-318.	0.4	22
42	Dynamics and phase diagram of the $\nu = \pm 1/2$ quantum Hall state in bilayer graphene. Physical Review B, 2010, 81, .	1.1	15
43	Gap generation and semimetal-insulator phase transition in graphene. Physical Review B, 2010, 81, .	1.1	122
44	DYNAMICAL GAPS AND QUANTUM HALL EFFECT IN GRAPHENE. Modern Physics Letters B, 2009, 23, 891-902.	1.0	1
45	Edge states on graphene ribbons in magnetic field: Interplay between Dirac and ferromagnetic-like gaps. Physical Review B, 2009, 79, .	1.1	37
46	On the universal ac optical background in graphene. New Journal of Physics, 2009, 11, 095013.	1.2	232
47	Supercritical Coulomb center and excitonic instability in graphene. Physical Review B, 2009, 80, .	1.1	98
48	Gap generation for Dirac fermions on Lobachevsky plane in a magnetic field. Annals of Physics, 2008, 323, 2132-2146.	1.0	17
49	Edge states, mass and spin gaps, and quantum Hall effect in graphene. Physical Review B, 2008, 77, .	1.1	48
50	Dynamics in the quantum Hall effect and the phase diagram of graphene. Physical Review B, 2008, 78, .	1.1	56
51	Edge states in quantum Hall effect in graphene (Review Article). Low Temperature Physics, 2008, 34, 778-789.	0.2	17
52	Toward a theory of the quantum Hall effect in graphene. Low Temperature Physics, 2008, 34, 790-793.	0.2	28
53	Anomalous Absorption Line in the Magneto-Optical Response of Graphene. Physical Review Letters, 2007, 98, 157402.	2.9	186
54	Sum rules for the optical and Hall conductivity in graphene. Physical Review B, 2007, 75, .	1.1	189

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55	AC CONDUCTIVITY OF GRAPHENE: FROM TIGHT-BINDING MODEL TO 2 + 1-DIMENSIONAL QUANTUM ELECTRODYNAMICS. International Journal of Modern Physics B, 2007, 21, 4611-4658.	1.0	346
56	Magneto-optical conductivity in graphene. Journal of Physics Condensed Matter, 2007, 19, 026222.	0.7	768
57	Excitonic gap, phase transition, and quantum Hall effect in graphene. Physical Review B, 2006, 74, .	1.1	163
58	Unusual Microwave Response of Dirac Quasiparticles in Graphene. Physical Review Letters, 2006, 96, 256802.	2.9	476
59	Transport of Dirac quasiparticles in graphene: Hall and optical conductivities. Physical Review B, 2006, 73, .	1.1	449
60	Unconventional Integer Quantum Hall Effect in Graphene. Physical Review Letters, 2005, 95, 146801.	2.9	1,214
61	Magnetic oscillations in planar systems with the Dirac-like spectrum of quasiparticle excitations. II. Transport properties. Physical Review B, 2005, 71, .	1.1	141
62	Gauged Nambu-Jona-Lasinio model with extra dimensions: Phase structure and renormalizability. Physical Review D, 2004, 70, .	1.6	6
63	SURPRISES IN NONPERTURBATIVE DYNAMICS IN $\bar{t}f$ -MODEL AT FINITE DENSITY. Modern Physics Letters A, 2004, 19, 1341-1356.	0.5	22
64	d-density wave state in an external magnetic field. Physica C: Superconductivity and Its Applications, 2004, 408-410, 420-421.	0.6	0
65	Spontaneous rotational symmetry breaking and roton like excitations in gauged $\bar{t}f$ -model at finite density. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2004, 581, 82-92.	1.5	34
66	Magnetic oscillations in planar systems with the Dirac-like spectrum of quasiparticle excitations. Physical Review B, 2004, 69, .	1.1	238
67	Thermal conductivity in 3D NJL model under external magnetic field. European Physical Journal B, 2003, 33, 397-411.	0.6	34
68	Thermal conductivity and competing orders in d-wave superconductors. European Physical Journal B, 2003, 37, 363-368.	0.6	18
69	Fractal structure of the effective action in (quasi)planar models with long-range interactions. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 313, 472-477.	0.9	21
70	Transport properties in the d-density-wave state in an external magnetic field: The Wiedemann-Franz law. Physical Review B, 2003, 67, .	1.1	37
71	Comment on "Electron Mass Operator in a Strong Magnetic Field and Dynamical Chiral Symmetry Breaking". Physical Review Letters, 2003, 90, 089101; author reply 089102.	2.9	5
72	Infrared cutoff dependence of the critical flavor number in three-dimensional QED. Physical Review D, 2003, 68, .	1.6	45

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73	Anomalous dimensions of gauge-invariant amplitudes in massless effective gauge theories of strongly correlated systems. <i>Physical Review B</i> , 2003, 67, .	1.1	22
74	Large N dynamics in QED in a magnetic field. <i>Physical Review D</i> , 2003, 67, .	1.6	15
75	Low-temperature superfluid stiffness of ad-wave superconductor in a magnetic field. <i>Physical Review B</i> , 2002, 66, .	1.1	6
76	Dynamical chiral symmetry breaking in gauge theories with extra dimensions. <i>Physical Review D</i> , 2002, 65, .	1.6	26
77	MAGNETIC FIELD INDUCED GAP AND KINK BEHAVIOR OF THERMAL CONDUCTIVITY. <i>Modern Physics Letters B</i> , 2002, 16, 107-116.	1.0	32
78	Magnetic field driven metal-insulator phase transition in planar systems. <i>Physical Review B</i> , 2002, 66, .	1.1	403
79	Quantum phase fluctuations responsible for pseudogap. <i>Physica C: Superconductivity and Its Applications</i> , 2002, 370, 239-245.	0.6	5
80	Collective modes of color-flavor locked phase of dense QCD at finite temperature. <i>Nuclear Physics A</i> , 2002, 700, 577-617.	0.6	19
81	Effective action approach to the Leggett's mode in two-band superconductors. <i>European Physical Journal B</i> , 2002, 30, 45-51.	0.6	80
82	Dynamical chiral symmetry breaking on a brane in reduced QED. <i>Physical Review D</i> , 2001, 64, .	1.6	96
83	Breaking of chiral symmetry in quenched QED in dimension $D < 4$ . <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2001, 102-103, 355-362.	0.5	1
84	Carlson-Goldman modes in the color superconducting phase of dense QCD. <i>Physical Review D</i> , 2001, 64, .	1.6	3
85	Nonperturbative infrared dynamics of three-dimensional QED with a four-fermion interaction. <i>Physical Review D</i> , 2001, 63, .	1.6	42
86	Phase fluctuations and single-fermion spectral density in 2d systems with attraction. <i>Journal of Experimental and Theoretical Physics</i> , 2000, 90, 993-1009.	0.2	14
87	Physical Gauge in the Problem of Dynamical Chiral Symmetry Breaking in QED in a Magnetic Field. <i>Foundations of Physics</i> , 2000, 30, 349-357.	0.6	6
88	Chiral symmetry breaking in dimensionally regularized nonperturbative quenched QED. <i>Physical Review D</i> , 1999, 60, .	1.6	31
89	Dynamical Chiral Symmetry Breaking in QED in a Magnetic Field: Toward Exact Results. <i>Physical Review Letters</i> , 1999, 83, 1291-1294.	2.9	60
90	Derivative expansion of the effective action for quantum electrodynamics in 2+1 and 3+1 dimensions. <i>Journal of Mathematical Physics</i> , 1999, 40, 5406-5439.	0.5	70

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91	PHASE FLUCTUATIONS AND NON-FERMI LIQUID PROPERTIES OF 2D FERMI-SYSTEM WITH ATTRACTION. International Journal of Modern Physics B, 1999, 13, 3510-3512.	1.0	2
92	Boundary effects in the magnetic catalysis of chiral symmetry breaking. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1999, 455, 217-223.	1.5	23
93	Electron self-energy in strong magnetic field: summation of double logarithmic terms. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1999, 450, 267-274.	1.5	38
94	Pseudogap phase formation in the crossover from Bose-Einstein condensation to BCS superconductivity. Journal of Experimental and Theoretical Physics, 1999, 88, 685-695.	0.2	23
95	Greenâ€™s function of a 2D Fermi system undergoing a topological phase transition. JETP Letters, 1999, 69, 141-147.	0.4	13
96	Theory of the magnetic catalysis of chiral symmetry breaking in QED. Nuclear Physics B, 1999, 563, 361-389.	0.9	124
97	Analytic structure of scalar composites in the symmetric phase of the gauged Nambuâ€™Jona-Lasinio model. Physical Review D, 1998, 57, 6356-6371.	1.6	10
98	Chiral symmetry breaking by a non-Abelian external field in 2+1 dimensions. Physical Review D, 1998, 57, 5230-5235.	1.6	13
99	Effective action and conformal phase transition in three-dimensional QED. Physical Review D, 1998, 58, .	1.6	24
100	Pseudogap Phase Formation in the Crossover from Bose-Einstein Condensation to BCS Superconductivity in Low-Dimensional Systems. International Journal of Modern Physics B, 1998, 12, 3035-3038.	1.0	3
101	Chiral symmetry breaking in QED in a magnetic field at finite temperature. Physical Review D, 1997, 56, 5251-5253.	1.6	49
102	On peculiarities of superconducting state formation in 2D metallic systems. Low Temperature Physics, 1997, 23, 612-617.	0.2	7
103	The behavior of the paramagnetic susceptibility of a 2D metal during transitions between normal, pseudogap, and superconducting phases. Low Temperature Physics, 1997, 23, 936-937.	0.2	2
104	Computation of the DeWitt-Seeley-Gilkey coefficient E4 for nonminimal operator in curved space. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1997, 389, 365-369.	0.7	11
105	Phase diagram of a 2D metal system with a variable number of carriers. JETP Letters, 1997, 65, 182-188.	0.4	34
106	Catalysis of Dynamical Flavor Symmetry Breaking by a Magnetic Field in 2 + 1 Dimensions. Physical Review Letters, 1996, 76, 1005-1005.	2.9	86
107	Dimensional reduction and catalysis of dynamical symmetry breaking by a magnetic field. Nuclear Physics B, 1996, 462, 249-290.	0.9	422
108	(2+1)-dimensional QED with dynamically massive fermions in vacuum polarization. Physical Review D, 1996, 53, 2227-2235.	1.6	44

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109	Derivative expansion for the one-loop effective Lagrangian in QED. Canadian Journal of Physics, 1996, 74, 282-289.	0.4	58
110	An integral equation of Muskhelishvili type: Strong quantum electrodynamics. Journal of Mathematical Physics, 1995, 36, 2581-2592.	0.5	0
111	Dimensional reduction and dynamical chiral symmetry breaking by a magnetic field in 3 + 1 dimensions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1995, 349, 477-483.	1.5	269
112	Dynamical chiral symmetry breaking by a magnetic field in QED. Physical Review D, 1995, 52, 4747-4751.	1.6	135
113	Dynamical flavor symmetry breaking by a magnetic field in 2+1 dimensions. Physical Review D, 1995, 52, 4718-4735.	1.6	206
114	Symbolic Computation of DeWitt-Seeley-Gilkey Coefficients on Curved Manifolds. Journal of Symbolic Computation, 1994, 17, 283-294.	0.5	6
115	Critical coupling in strong QED with weak gauge dependence. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1994, 329, 117-122.	1.5	44
116	Catalysis of Dynamical Flavor Symmetry Breaking by a Magnetic Field in 2 + 1 Dimensions. Physical Review Letters, 1994, 73, 3499-3502.	2.9	483
117	Chiral symmetry breaking with the Curtis-Pennington vertex. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1993, 303, 157-162.	1.5	22
118	Heat kernel expansion for nonminimal differential operations and manifolds with torsion. Nuclear Physics B, 1991, 362, 449-471.	0.9	35
119	ON THE EFFECTIVE ACTION IN FIELD THEORIES WITH DYNAMICAL SYMMETRY BREAKING. Modern Physics Letters A, 1991, 06, 2443-2452.	0.5	10
120	Local heat kernel asymptotics for nonminimal differential operators. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1991, 270, 29-36.	1.5	10
121	Asymptotics of the heat kernel for nonminimal differential operators. Ukrainian Mathematical Journal, 1991, 43, 1432-1441.	0.1	4
122	On-diagonal heat kernel expansion in covariant derivatives in curved space. Classical and Quantum Gravity, 1991, 8, 279-285.	1.5	11
123	Mixed fermion-photon condensate in strongly coupled quantum electrodynamics. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1990, 242, 474-479.	1.5	2
124	Seeley-Gilkey coefficients for fourth-order operators on a riemannian manifold. Nuclear Physics B, 1990, 333, 296-316.	0.9	37
125	Green's functions of composite operators and bound states in gauge theories. Physical Review D, 1989, 39, 2355-2367.	1.6	12
126	On the spectrum of excitations in some strong coupling gauge models. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 220, 635-640.	1.5	3



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127	New algorithm for computing the coefficients in the heat kernel expansion. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1989, 225, 233-239.	1.5	37
128	Chiral Symmetry Breaking and Nonperturbative Scale Anomaly in Gauge Field Theories. Progress of Theoretical Physics, 1989, 81, 426-450.	2.0	35
129	On the character of scalar symmetry breaking in gauge theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1988, 213, 177-180.	1.5	5
130	Nonperturbative scale anomaly and dilatons in gauge field theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 198, 79-83.	1.5	26
131	Non-perturbative scale anomaly and composite operators in gauge field theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 198, 362-366.	1.5	9
132	Chiral symmetry breaking in asymptotically free and non-asymptotically free gauge theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1987, 191, 141-146.	1.5	24
133	Dynamical mass function of quark and effective potential in QCD. Zeitschrift für Physik C-Particles and Fields, 1985, 29, 547-550.	1.5	17
134	Dynamical symmetry breaking and particle mass generation in gauge field theories. Rivista Del Nuovo Cimento, 1983, 6, 1-90.	2.0	218
135	On the dynamics of tumbling gauge theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1983, 123, 407-412.	1.5	8
136	Dynamical realization of the linear $\bar{\psi}\psi$ -model and bifermion condensates in QCD. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1983, 123, 428-432.	1.5	7
137	Dynamical generation of the spectrum of fermions in non-abelian gauge field theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1981, 100, 157-162.	1.5	33
138	Vacuum instability of massless electrodynamics and the Gell-Mann-Low eigenvalue condition for the bare coupling constant. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1978, 78, 136-139.	1.5	48
139	On the vacuum rearrangement in massless chromodynamics. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1978, 76, 585-588.	1.5	25
140	Renormalization group and infrared behaviour in theories with coupled massless fields. Nuclear Physics B, 1978, 135, 354-364.	0.9	1
141	Renormalization group and superconductivity, and neutrino-type solutions in field theory. Nuclear Physics B, 1976, 110, 445-460.	0.9	5
142	Renormalization group and dynamical symmetry breakdown in abelian gauge theories. Nuclear Physics B, 1976, 109, 526-546.	0.9	2